

the equipment of the expanded R.A.F. Moreover, the Canadian scheme is to be regarded in the light of a long-range supply, in more ways than one, capable of continuing to manufacture military aircraft for us in the unfortunate event of our being involved in a European war.

Canadian industry has recently taken the very wise step of creating a co-ordinating company, which will act as the intermediary between the Canadian manufacturing firms and the British Government. In this way not only will time be saved, but if the new body is established on the right lines (no final decision has been reached) the uniformity of Canadian-built aircraft is more likely to be assured.

The position is not without delicacy and will want careful and tactful handling, but with good will on all sides it should be possible to arrive at an arrangement satisfactory to all concerned. The mission which has gone to Canada, headed by Sir Hardman Lever, and including that most persuasive of all British ambassadors, Mr. F. Handley Page, President of the Society of British Aircraft Constructors, may be counted upon to use tact in dealing with the various problems which are bound to arise.

It is very necessary that there should be no repetition of certain incidents which have left a rather bad taste in America, and have given at least one famous American aircraft constructor a poor idea of British courtesy.

### Range, Load and Speed

**B**Y its recent flight from Foynes to Montreal, a distance of 2,860 miles, in 20 hours 20 minutes, carrying a pay load of 1,000 lb., the *Mercury*, upper component of the Short-Mayo composite aircraft, has demonstrated not only the feasibility of transporting a considerable pay load from Great Britain to the American continent against prevailing winds, but that the running cost need not be prohibitive.

It would, of course, be unfair to take the combined cost of the *Maia* and *Mercury*, and the actual running cost of the latter's flight and set them against the pay load. No one has ever suggested running a service with one composite aircraft. The scheme is only practical when the intensity of traffic is such that frequent launches can be made in both directions, and a composite aircraft service would be operated by at least one lower component at each end and a number of upper components working the shuttle service.

No cost figures could thus be worked out on a basis of this first flight, but it is of interest to note that the average fuel consumption during the flight worked out at about 54 gallons per hour for the four Napier Rapier VI engines. That is to say, the *Mercury* used something like 1,100 gallons of petrol, the cost of which would be in the neighbourhood of £80. As the pay load was 1,000 lb. the cost in petrol of carrying the pay load over a distance of 2,860 miles was about 1s. 7d. per pound. Fuel cost is not, of course, the only one, but this amazingly low figure does afford a good example of the economy which results from operating an upper component of small size and relatively low power. (The Napier Rapier VI engines are rated at 370 b.h.p. at 4,750ft.)

Incidentally, it may be pointed out that the *Maia* demonstrated another claim which has been advanced by the advocates of composite aircraft: that when not launching upper components the lower component can be used for normal commercial operation. The machine carried ten passengers from Southampton to Foynes.

In spite of headwinds which varied in strength, but probably averaged 25 m.p.h., the *Mercury's* average ground speed between Foynes and Montreal was about 141 m.p.h., and over the Atlantic section it was about 152 m.p.h., which is remarkably good for the engine power, and shows that for a seaplane *Mercury* is very efficient.

### The Next Step

**T**HE claim advanced by Major Mayo, in the early days of composite aircraft discussions, that the scheme would double the range and pay load and greatly increase the cruising speed, appears to have been fully justified. The *Mercury* was launched at a gross weight of 20,800 lb., at which the machine was fully within its C. of A. weight. For alighting, and for unassisted take-off, the C. of A. is 14,000 lb., a difference of 6,800 lb. which can be used for fuel and pay load. When the machine landed at Montreal there were about 80 gallons of fuel left, so that the range must be at least 3,000 miles against the headwinds encountered, and probably 3,500 miles in still air.

We believe that the official performance test figures are a top speed of 212 m.p.h. and a cruising speed of 182 m.p.h. For 1,480 b.h.p. that is remarkably good, and in this connection it should be pointed out that if the *Mercury* had been a landplane with retractable undercarriage the cruising speed would probably be increased by about 50 m.p.h. The lower drag could be used to obtain the higher speed, or to increase the range, or to carry a greater pay load, or a combination of the three.

The demonstration has definitely shown that the composite aircraft scheme is workable, and indicates that with the appropriate ground organisation and a proper number of upper and lower components a commercial service could be operated. For providing that proof the Short-Mayo concerns, Imperial Airways, and the Air Ministry deserve credit.

That a landplane version of the upper component will follow is not to be doubted. There might be practical difficulties in finding suitable sites for mounting it on the *Maia*, and so it is legitimate to assume that a landplane lower component will be needed. At present the Ensign class is about the only suitable type, and so we may expect to see one modified to act as lower component.

### The Contents of a Haversack

**W**HEN in the Great War embryo officers were getting headaches over the study of the military manuals, one phrase never failed to arouse delight and hilarity. It was laid down that the soldier's haversack should contain (among other things) "the unexpended portion of the previous day's ration."

That is English as written by the officer of the regular Army, presumably a former cadet of Sandhurst or Woolwich. Its grammar is beyond reproach, and it makes its meaning clear beyond all possibility of doubt. These are merits, but none the less the phrase is dreadful.

"But surely," our readers will say, "that sort of thing might have gone down all right with the Royal Military College and the Royal Military Academy, but our own modern R.A.F. Cranwell will rise to something better than that." Well, we hope that it will, but evidently it will have its work cut out to do so, for in the March examinations for admission to the R.A.F. College nearly half the candidates failed to gain half marks in English and general knowledge. Cranwell is not to blame for that; the fault lies with the schools.

We certainly hope that the Professor of English at Cranwell will be able to do something about this knowledge of English. It is the permanent commission officers of the Air Force who come in time to rule the Air Ministry, and who have to draw up the Weekly Orders and so forth. There have been times when the wording of those orders has reduced us to tearful mirth, and we tremble for the future if the output from Cranwell should regularly have an insufficient knowledge of English.

### Forthcoming Events

July 29-August 1. Courtrai Rally, Belgium.  
July 30. Official opening of Exeter Airport by Secretary of State for Air.  
July 30. Folkestone Aero Trophy Race, Lympne.  
August 20. Eastbourne Flying Club: Garden Party and Opening of New Club-house.  
August 27-28. Southend Flying Club: Flying Meeting and Race.

September 3. Cinque Ports Wakefield Cup Race, Lympne.  
September 10. Cardiff Aeroplane Club: London-Cardiff Race.  
September 11-18. Swedish Civil Aviation Week.  
September 21. Aero Golfing Society: Cellon Trophy, Richmond Golf Club.  
November 18-December 4. Paris Aero Show.